



Introduction

A paperless learning environment is not new. It is becoming a universally accepted method of instruction especially on university campuses. The term "paperless classroom" encompasses all the ways that classes can be taught and managed using new technologies (Furr, 2003).

A paperless classroom is just that... paperless. It is not only the effort but the successful integration of technology in the classroom that eliminates all purposes of paper, ink, clutter, and stuff. Students will be able to access their lessons, homework, and grades solely through the Internet or school network.

(Google Sites)

The momentum to go green coincides with advancements in technology and an awareness of how human consumption of scarce resources impacts the environment for our generation and those yet to come. Transferring from paper to a paperless classroom has never been easier. Instructors only need to choose the method for student submissions and proceed from there.

The growing demand for tablet computers is generating a call for abolishing paper related tasks in and out of the classroom. As part of their education, students need to understand how to electronically submit important documents. A paperless classroom is not only a vision of the future but a do-able opportunity for instructors. Teachers are in the classroom not only to instruct but also to set a standard for life and future employment opportunities for their learners.

Paperless learning involves a fundamental shift from the physical exchange of materials between teacher and student to a virtual exchange. With information technology, students locate resources, communicate via e-mail, conduct research on the WWW and submit assignments electronically to the teacher. (Slowinski, 2000).

The wasteful consumption of a scarce resource (paper) should not be condoned or encouraged. Any instructor can succeed in going green. This can be accomplished with any type of teaching, including but not limited to language learning.

E-mail Option

There are many options to choose from if you decide to go paperless. A computer room is the first

choice for an instructional locale. Once a room is chosen, important items to consider are the technology available in the classroom, student computer aptitudes and instructor capabilities. Depending on the classroom, going green can range from simple e-mail submission and return to specific software such as a Wiki or Google Docs.

If simple e-mail is chosen, the instructor needs to decide if students will submit assignments as e-mail only or as e-mail with attachments such as Microsoft Word. Either method offers relative ease for students and teachers. Both parties should understand how work is to be submitted. There is nothing more frustrating for an instructor than having half the students send in their work one way and the other half another way. This slows down the review and grading process, defeating the aim of a paperless class to streamline grading and marking. The aim of a paperless class is not just to be environmentally friendly and tech savvy but to refine outdated teaching methods.

E-mails can be fast and efficient if submitted uniformly. Have students include their student number in the subject line of the e-mail. As Furr (2003) notes, a simple format for the e-mail "subject" line makes filing for class, date, and student easy and accurate, since one can use the e-mail search function to find the appropriate message. Having each student put their student number in the subject line allows for submitted e-mails to be collected in numerical order.

For large classes of 100 students or more, the consequence of having un-numbered assignments becomes clear all too quickly once grades need to be marked. It is imperative that learners follow submission instructions properly to allow for timely marking and return of assignments.

Another concern is whose e-mail address students will submit their work to. It's best to have learners send their assignments to a Google or Yahoo account that the instructor specifies or to the instructor's school e-mail account, if there is one. Either method is superior to having learners remit their tasks to a teacher's personal e-mail account. This eliminates privacy deleted or intermingled with one's own mails.

Use of Wikis

A Wiki is a free online software application that allows users to add additional pages. Simply put, a Wiki is like a homepage that allows users to go to another page easily by clicking, for example, on a

student name. This is convenient for courses that involve writing, for instance. One page can be the instructor's page while pupils have their own pages. The teacher acts as the administrator, assigning a name for the Wiki such as the course number and assigning a username and password for secure access. Students can work individually or in peer groups, assigning and dividing up tasks. Wikis can be applied to almost any subject matter. All edited pages are automatically saved every few minutes. If students forget to logout, most Wikis offer a prompt once they log in again to continue with prior work. This ensures that valuable student labor does not get erased. A new 'comment' button allows instructors or students to add remarks alongside submissions.

Google Docs

Google Docs is another free option for creating an electronic learning environment. Google Docs can be considered the latest procedure for conducting a paperless course for a group of students. While e-mails and Wikis provide for more direct teacher-student lines of submission and returns, Google Docs allows for a more open and collaborative approach.

Google Docs provides many ways to go paperless through sharing and collaboration options. There is not just one single right way to use Google Docs for a paperless classroom. Rather there are many tools and features that can be used on their own or in combination to meet your varying needs

(North Canton City Schools, 2012)

A key phrase for Google Docs is 'flexibility of use'; they can be adapted to any subject or course matter and give instructors and students a broader range of options for creating and sharing. While E-mails and Wikis are more than adequate for simple writing exchanges, they bog down when it comes to spread sheets or graphics. In contrast, Google Docs allows you to work on text documents, spread sheets or presentations that can be easily shared and made available to others. Editing can be done individually or by groups. The opportunities for use are only limited by the imagination of the teacher and students.

Alternative Options

There are many other possibilities based on school budgets and class sizes. One option is the Smartboard. This has been defined as follows:

Smartboard: An interactive learning white board that can be used in the classroom. It projects what's on the computer screen, can be written on like a white

board, has interactive activities for manipulation of objects projected on it, and gives opportunity for interactive reusable objects.

(Google Sites)

The use of a Smartboard allows for classroom technology without the expense of purchasing and constantly maintaining large banks of computers for student use. Of course, it all depends on the budgetary constraints and needs of the students. Smartboards are available in a variety of sizes with various options to fit different budgets.

A Smartboard can be a practicable option. It requires less technical know-how on the part of the instructor. Depending on subject matter and the numbers of learners, the touch screen option can be particularly exciting for younger learners. With a Smartboard, connecting to the Internet is as easy as a normal computer hook-up. Although a Smartboard doesn't allow students the luxury of their own computers, a small or medium-sized class can still enjoy connecting to the World Wide Web for information and educational resources.

Where there are computer limitations, the use of USB sticks for student storage or group projects is a low tech option for paperless education. An important point is to have a back-up system in case of misplaced or forgotten USBs. Projects can be saved on an instructor's device along with students' USB's to ensure that no work is deleted.

Difficulties

As with any approach, there can be challenges regardless of the paperless process preferred. These may include computer system failures. While this is extremely rare, it is always a possibility. Some students may face difficulties logging in. Many schools assign individual usernames and passwords to each student. If a student fails to recall their username and/or password, they can get locked out of the system. If this should occur (most often at the beginning of the school year), the instructor can enter students in using their own password and username.

Once in the system, a Wiki has its own password and username which instructors can produce or alter if need be. This usage of 'one password to rule them all' allows for ease of access or denial. Although one should always be vigilant, spam or viruses need not be of immense concern. Flees (2011) points out more precise areas of concern for implementing a paperless classroom:

- Lack of Technology Resources
- Can all students access the necessary resources?*
- Some students might not have internet at home.

▪ Lack of Financial Resources

Do parents have the funds to purchase such resources for their child (ren)?

- Can schools afford to purchase a laptop / e-reader / tablet for all their students?

▪ New technologies are expensive

To create a paperless classroom, you need computers and scanners. However, many educators find it difficult to create an effective paperless classroom without microphones, video cameras and laptops. Some teachers now depend on iPads and other tablets in the classroom. While it is unnecessary to provide one for every student, this is still a very expensive task to fulfill.

▪ Loss of 1-on-1 or Face-to-Face Interaction

Some students require face-to-face interaction to activate effective learning. This is difficult to lose for students who require structured lessons.

- This loss can be compensated. Modern technologies allow face-to-face interaction via Skype, Web broadcasting, and video conference.

▪ Requires an enhanced knowledge of tech-tools

Teachers need to be comfortable with all the tools in order to best instruct their students.

- A common problem with new technologies in the classroom is that many tenured instructors aren't very comfortable using new tools, provided they have even the slightest knowledge of how to use them. This fact can potentially limit the expansion and growth of the paperless classroom.

Aside from these – and the initial trepidation of instructors - there are no obstacles that can't be surmounted. Going paperless is an easy step that, once instigated, will have instructors wondering why they didn't introduce this procedure earlier.

Advantages

Besides being ecologically sound and safe, the most obvious benefit is the cost savings in paper used. In a sizable school or campus, the differences between a large and small outlay in paper and printing can quickly become apparent. After instructors overcome the challenge of starting something unfamiliar, the simplicity of the process will be seen as in the best interests of students and teachers. Gone are the days of handing in spiral notebooks to be corrected and returned since electronic transfer of documents is fast and easy. A paperless classroom is more in tune with today's living and learning environment.

Students today don't expect to learn and be taught with the methods of yesteryear. Some advantages offered to learners and lecturers are linguistic.

▪ Leisure and Flexibility

Students and teachers can complete tasks at times that work best for them.

- If a teacher wants a class to view a video, not everyone needs to be sitting in the same room at the same time. Each individual can control the time, sound volume, ability to rewind, pause, etc.

▪ Availability of Resources

Multiple people can use the same source of information at one time.

- If you only have one encyclopedia set and students have to find data about the United States, they can't all use the "U" book at the same time. If you have internet access, all students can use the same source at the same time to do their research.

▪ Organization

Teachers can post rubrics and class schedules online for everyone to access.

- We're human, we make mistakes, we misplace the important notes we jotted down on due dates.

▪ Minimizes problems

Students can submit their homework online.

- Teachers can find everything in one location and not worry about misplacing a student's work.

- No worries about running out of ink or paper, the computer not recognizing the printer or homework being eaten by the family dog.

- Plus no more student excuses like "I thought it was due next week... I couldn't find my schedule... You never told us the paper had to be double-spaced... My dog ate my homework..."

▪ Collaboration

Students can work together to share ideas.

- As questions arise, they can be posted on a discussion forum so other students can share their knowledge. This can be beneficial to all parties involved: it helps the student who asked the question by supplying guidance, it helps others who may have the same question, it re-assures the student who answered the question proving they have learned the material well enough to explain it to others, and it's an opportunity for teachers to see if students are actually learning course concepts.

- Group projects are easier since students can do their work from a location of their choice.

▪ Self-Assessment

Students can review their work.

- If assignments are done over an extended time, students can look over their work to locate areas needing improvement and see where they have reached proficiency.

▪ Feedback

Students and teachers can review created works.

- The work can be reviewed multiple times, by multiple people during the same time frame.
- Feedback can be immediate. Students don't have to wait until the next class, one week later, to know the results of their work. This also allows students to review feedback then come to the next class with revisions. (Flees, 2011).

Conclusion

There may be a time in the not so distant future when children ask adults "what's paper?" One team of researchers comments as follows:

The benefits of a paperless classroom are: (1) improved efficiency of the learning experience; (2) facilitation of asynchronous learning; (3) helping students develop the virtual environment skills and competencies they will need in the post-graduate private sector, and (4) contributing to the sustainability efforts of the university. The traditional paper-dependent learning experience and subsequent paper trails are replaced with a more efficient electronic creation, file storage and maintenance, and exchange of information and feedback. Learning performance is more easily assessed and recorded, which permits quicker evaluation of the effectiveness of specific learning activities.

(De Bonis & De Bonis, 2011).

Some instructors may be apprehensive of how a paperless classroom could be possible. However, as Slowinski (2000) notes:

Adopting a paperless classroom is not an educational panacea, but a potential catalyst for improved learning in schools. Through electronic sources, the learning process is removed from the rigidity of the physical classroom and connected to the world's knowledge base. Students learn, communicate and submit assignments anywhere and at anytime rather than being constrained by physical materials and the classroom itself. More importantly, teachers and students become free from the restrictions of the traditional roles of teacher as disseminator and student as recipient.

The ease of accessing data may be astounding for older instructors not raised from childhood with the Internet. Pupils today have only to tap a few keys to open up huge libraries of knowledge. As Heck (2012) notes, "there is more information available to any student with a smartphone than an entire empire would have had access to 3,000 years ago". A paperless classroom is a key element for new methods of teaching and learning.

Smartphones, tablets and other new devices are driving the move toward online paperless instruction. On college campuses more lectures, classes, and courses are taking the paperless path (Artley et al 2011, Demski, 2012, and Giles, 2012).

What's important to remember is that this doesn't require an elaborate magic act: paper in the classroom today, not a single sheet tomorrow. Instructors may have to experiment for a semester or two with what works best, devising techniques from tools such as e-mail, Wikis, or Google Docs.

Going green need not be a maddening experience but rather a learning experience for all.

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